

### DETAILED ACTION

1. This communication is responsive to Amendment filed 05/20/08.

Claims 1-31 are pending in this application.

### EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicant's representative Gary S. Williams, Reg. No. 31,066, on August 08, 2008.

The application has been amended as follows:

- **Cancel claims 1, 2, and 3**
- **Claim 4 has been amended as:**

A method for searching a document database, comprising:

receiving a search query;

returning a search result corresponding to the search query, including:

determining whether a cached query result corresponding to the search query is stored in a cache;

when the determining returns a negative result, generating a first search result in accordance with a first set of predetermined search criteria and returning as the search result at least a subset of the first search result;

when the determining returns a positive result:

accessing a reuse count of the cached search result, and determining a quality of the cached search result; wherein the cached search result comprises a list of results that satisfy the search query, and the reuse count comprises a number of times that the list of results has been reused to respond to submissions of the search query;

when the reuse count is less than or equal to a predetermined threshold count or a quality indication of the cached search result does not meet predefined criteria, returning as the search result at least a subset of the cached search result;

when the reuse count is larger than the predetermined threshold count, and the quality indication meets the predefined criteria, generating an improved search result in accordance with a second set of predetermined search criteria using additional search resources, wherein the improved search result comprises an improved list of results that satisfy the search query, returning as the search result at least a subset of the improved search result, updating the cache with the improved search result, and updating the reuse count of the cached search result; and

when the reuse count is larger than the predetermined threshold count and the quality indication does not meet the predefined criteria and indicates that the cached search result is the improved search result corresponding to the search query, retrieving the improved search result from the

cache, and returning as the search result at least a subset of the improved search result.

- **Claim 5 has been amended as:**

The method of claim [[2]] 4, wherein:

when the quality indication has a first value, the cached search result is generated by searching only the document database; and

wherein the second set of search criteria comprises searching both the document database and an additional database.

- **Claim 6 has been amended as:**

The method of claim [[2]] 4, wherein:

when the quality indication has a first value, the cached search result is generated by searching the document database using a standard search depth; and

the second set of predetermined search criteria comprises searching the document database with a larger search depth than the standard search depth.

- **Claim 7 has been amended as:**

The method of claim [[2]] 4,

wherein the first set of search criteria comprises searching the document database using initial search criteria; and

wherein the second set of predetermined search criteria comprises searching the document database using modified search criteria distinct from the initial search criteria.

- **Claim 8 has been amended as:**

The method of claim [[2]] 4, wherein generating an improved search result comprises:

submitting the search query to one or more document identification and document servers in accordance with the second set of predetermined search criteria;

receiving search results from the one or more document identification and document servers; and

creating a search result list from the received search results.

- **Claim 9 has been amended as:**

The method of claim [[2]] 4 further comprising:

when the cache is determined not to have stored therein the search result corresponding to the search query:

generating a standard search result in accordance with the first set of predetermined search criteria;

storing the standard search result in the cache;

setting the reuse count of the cached search result to an initial value; and

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returning at least a subset of the standard search result.

- **Cancel claims 12, 13, and 15**
- **Claim 11 has been amended as:**

A method for searching a document database, comprising:

receiving a search query;

returning a search result corresponding to the search query, including:

determining whether a cached query result corresponding to the search query is stored in a cache;

when the determining returns a negative result, generating a first search result in accordance with a first set of predetermined search criteria and returning as the search result at least a subset of the first search result;

when the determining returns a positive result:

accessing a reuse count of the cached search result, and determining a quality of the cached search result; wherein the cached search result comprises a list of results that satisfy the search query, and the reuse count comprises a number of times that the list of results has been reused to respond to submissions of the search query;

when the reuse count is less than or equal to a predetermined threshold count or a quality indication of the cached search result does not meet predefined criteria, returning as the search result at least a subset of the cached search result; and

when the reuse count is larger than the predetermined threshold count, and the quality indication meets the predefined criteria, generating an improved search result in accordance with a second set of predetermined search criteria using additional search resources, wherein the improved search result comprises an improved list of results that satisfy the search query, and returning as the search result at least a subset of the improved search result, updating the cache with the improved search result, and updating the reuse count of the cached search result;

when the cache is determined not to have stored therein the search result corresponding to the search query:

generating a standard search result in accordance with the first set of predetermined search criteria;

storing the standard search result in the cache;

setting the reuse count of the cached search result to an initial value; and

returning at least a subset of the standard search result; and

when the determining returns a positive result and the reuse count is less than or equal to the predetermined threshold count:

retrieving the standard search result from the cache;

and

returning at least a subset of the standard search result.

- **Claim 14 has been amended as:**

The system of claim [[13]] 16, wherein the search results in the cache comprise:

identifications of documents;

contents of portions of documents corresponding to at least a subset of the identifications of documents; and

parameters of documents corresponding to the identifications of documents.

- **Claim 16 has been amended as:**

A system for searching a document database, comprising:

a cache for storing search results corresponding to previously processed search queries;

a search controller including one or more computer programs containing instructions for:

determining whether a cached search result corresponding to a specified search query is stored in the cache;

returning a search result corresponding to the search query,

including:

when the determining returns a negative result, generating a first search result corresponding to the search query in accordance with a first set of predetermined search criteria and returning as the search result at least a subset of the first search result;

when the determining returns a positive result:

accessing a reuse count of the cached search result and determining a quality of the cached search result; wherein the cached search result comprises a list of results that satisfy the search query, and the reuse count comprises a number of times that the list of results has been reused to respond to submissions of the search query;

when the reuse count is less than or equal to a predetermined threshold count or a quality indication of the cached search result does not meet predefined criteria, returning as the search result at least a subset of the cached search result; and

when the reuse count is larger than the predetermined threshold count and the quality indication meets the predefined criteria, generating an improved search result in accordance with a second set of predetermined search criteria using additional search resources, wherein the improved search result comprises an improved list of results that satisfy the search query, returning at least a subset of the improved search result as the search result, updating the cache with the improved search result, and updating the reuse count of the cached search result; and

when the reuse count is larger than the predetermined threshold count and the quality indication does not meet the predefined criteria and indicates that the query result stored in the cache is the improved search result corresponding to the search query, retrieving the

improved search result from the cache<sub>1</sub> [[:]] and returning as the search result at least a subset of the improved search result.

- **Claim 17 has been amended as:**

The system of claim [[13]] 16, wherein:

when the quality indication has a first value, the cached search result is generated by searching only the document database; and

the second set of predetermined search criteria comprises searching both the document database and an additional database.

- **Claim 18 has been amended as:**

The system of claim [[13]] 16, wherein:

when the quality indication has a first value, the cached search result is generated by searching the document database using a standard search depth; and

the second set of predetermined search criteria comprises searching the document database with a larger search depth than the standard search depth.

- **Claim 19 has been amended as:**

The system of claim [[13]] 16,

wherein the first set of search criteria comprises searching the document database using initial search criteria; and

wherein the second set of predetermined search criteria comprises searching the document database using modified search criteria distinct from the initial search criteria.

- **Claim 20 has been amended as:**

The system of claim [[13]] 16, wherein generating an improved search result comprises instructions for:

submitting the search query to one or more document identification and document servers in accordance with the second set of predetermined search criteria;

receiving search results from the one or more document identification and document servers; and

creating a search result list from the received search results.

- **Claim 21 has been amended as:**

The system of claim [[13]] 16, the computer programs of the search controller further comprising instructions for:

when the cache is determined not to have stored therein search results corresponding to the search query:

generating a standard search result in accordance with the first set of predetermined search criteria;

storing the standard search result in the cache;

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setting the reuse count of the cached search result to an initial value; and

returning at least a subset of the standard search result.

- **Claim 22 has been amended as:**

The system of claim [[13]] 16, wherein the instructions for generating the standard search result comprise instructions for:

submitting the search query to one or more document identification and document servers in accordance with the first set of predetermined searching criteria;

receiving search results from the one or more document identification and document servers; and

creating a search result list from the received search results.

- **Claim 23 has been amended as:**

A system for searching a document database, comprising:

a cache for storing search results corresponding to previously processed search queries;

a search controller including one or more computer programs containing instructions for:

determining whether a cached search result corresponding to a specified search query is stored in the cache;

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returning a search result corresponding to the search query,  
including:

when the determining returns a negative result, generating a  
first search result corresponding to the search query in accordance with a first set  
of predetermined search criteria and returning as the search result at least a  
subset of the first search result;

when the determining returns a positive result:  
accessing a reuse count of the cached search result  
and determining a quality of the cached search result; wherein the cached search  
result comprises a list of results that satisfy the search query, and the reuse  
count comprises a number of times that the list of results has been reused to  
respond to submissions of the search query;

when the reuse count is less than or equal to a  
predetermined threshold count or a quality indication of the cached search result  
does not meet predefined criteria, returning as the search result at least a subset  
of the cached search result; and

when the reuse count is larger than the  
predetermined threshold count and the quality indication meets the predefined  
criteria, generating an improved search result in accordance with a second set of  
predetermined search criteria using additional search resources, wherein the  
improved search result comprises an improved list of results that satisfy the  
search query, returning at least a subset of the improved search result as the

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search result, updating the cache with the improved search result, and updating the reuse count of the cached search result; and

when the cache is determined not to have stored therein search results corresponding to the search query:

generating a standard search result in accordance with the first set of predetermined search criteria;

storing the standard search result in the cache;

setting the reuse count of the cached search result to an initial value; and

returning at least a subset of the standard search result; and

when the determining returns a positive result and the reuse count is less than or equal to the predetermined threshold count, [[;]] retrieving the standard search result from the cache, [[;]] and returning at least a subset of the standard search result.

- **Claim 24 has been amended as:**

The system of claim [[13]] 16 , including:

one or more interface modules for receiving a search query;

one or more storage modules for storing document identifications and the corresponding documents to be searched;

wherein the search controller is configured to generate the improved search result by searching at least a subset of the stored document identifications.

- **Cancel claim 25**

- **Claim 26 has been amended as:**

The method of claim [[2]] 4, further comprising:

updating the cached search result with the improved search result.

- **Cancel claims 27 and 28**

- **Claim 29 has been amended as:**

The method of claim [[2]] 4, wherein generating the improved search result includes searching both the document database and an additional database.

- **Claim 30 has been amended as:**

The method of claim [[2]] 4, wherein generating the improved search result includes searching the document database to a larger search depth than a search depth used in generating the first search result.

- **Claim 31 has been amended as:**

The method of claim [[2]] 4, wherein generating the improved search result includes searching using modified search criteria distinct from the initial search criteria.

***Reasons for Allowance***

3. Claims 4-11, 14, 16-24, 29-31 are allowed, now renumbered as 1-21.
4. The following is a statement of reasons for the indication of allowable subject matter:

The present invention relates to a method and system for providing improved search services based on the frequency of a search query being requested to a search engine.

**Claim 4** recites, or similarly recites, in combination with the remaining elements, a method for searching a document database, comprising:

**determining whether a cached query result corresponding to the search query is stored in a cache;**

**when the determining returns a negative result, generating a first search result in accordance with a first set of predetermined search criteria and returning as the search result at least a subset of the first search result;**

**when the determining returns a positive result:**

**accessing a reuse count of the cached search result, and determining a quality of the cached search result; wherein the cached search result comprises a list of results that satisfy the search query, and the reuse count comprises a number of times that the list of results has been reused to respond to submissions of the search query;**

**when the reuse count is less than or equal to a predetermined threshold count or a quality indication of the cached search result does not meet predefined criteria, returning as the search result at least a subset of the cached search result;**

**when the reuse count is larger than the predetermined threshold count, and the quality indication meets the predefined criteria, generating an improved search result in accordance with a second set of predetermined search criteria using additional search resources, wherein the improved search result comprises an improved list of results that satisfy the search query, returning as the search result at least a subset of the improved search result, updating the cache with the improved search result, and updating the reuse count of the cached search result; and**

**when the reuse count is larger than the predetermined threshold count and the quality indication does not meet the predefined criteria and indicates that the cached search result is the improved search result corresponding to the search query, retrieving the improved search result from the cache, and returning as the search result at least a subset of the improved search result.**

The closest prior art, Porter et al. (U.S. Patent No. 7,181,444), shows a substantially similar method for searching a network for network based content related to a search query, includes receiving the search query, formatting the search query, and searching a database for the network based content related to the search query. The database comprises previous search results. If no network based content related to the search query is found in the database, the formatted search query is provided to at least one search engine. Search results are retrieved from the database or the at least one search engine and the retrieved search results are formatted (Summary). While Porter discloses retrieving a

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search result from a cache as an operation for searching the result from the query cache which including two different operations, *a subset of data is retrieved by the first search operation based on a request for a currently requested page of data, an additional subset of data is retrieved by the second search operation based on the same query and rows of data corresponding to a second display page (col. 7, line 59 to col. 8, line 7)*, Porter does not teach evaluating a reuse count. MacKeeth et al. (U.S. Patent No. 6,763,362) teaches accessing and evaluating reuse count as to *determine whether link-pop is greater or equal to a predetermined popularity threshold, (col. 9, lines 4-25)*. However, Porter et al. and McKeeth et al., singularly or in combination, fail to anticipate or render the above cited limitations obvious.

**Claim 16** is a system to perform the method of claim 4, claim 14 is thus patentable over the prior art for the same reason as discussed in claim 1.

**Claim 11** recites, or similarly recites, in combination with the remaining elements, a method for searching a document database, comprising:

determining whether a cached query result corresponding to the search query is stored in a cache;

when the determining returns a negative result, generating a first search result in accordance with a first set of predetermined search criteria and returning as the search result at least a subset of the first search result;

when the determining returns a positive result:

accessing a reuse count of the cached search result, and  
determining a quality of the cached search result; wherein the cached search result

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comprises a list of results that satisfy the search query, and the reuse count comprises a number of times that the list of results has been reused to respond to submissions of the search query;

when the reuse count is less than or equal to a predetermined threshold count or a quality indication of the cached search result does not meet predefined criteria, returning as the search result at least a subset of the cached search result; and

when the reuse count is larger than the predetermined threshold count, and the quality indication meets the predefined criteria, generating an improved search result in accordance with a second set of predetermined search criteria using additional search resources, wherein the improved search result comprises an improved list of results that satisfy the search query, and returning as the search result at least a subset of the improved search result, updating the cache with the improved search result, and updating the reuse count of the cached search result;

when the cache is determined not to have stored therein the search result corresponding to the search query:

generating a standard search result in accordance with the first set of predetermined search criteria;

storing the standard search result in the cache;

setting the reuse count of the cached search result to an initial value; and

returning at least a subset of the standard search result; and

when the determining returns a positive result and the reuse count is less than or equal to the predetermined threshold count:

retrieving the standard search result from the cache; and

returning at least a subset of the standard search result.

The closest prior art, Porter et al. (U.S. Patent No. 7,181,444), shows a substantially similar method for searching a network for network based content related to a search query, includes receiving the search query, formatting the search query, and searching a database for the network based content related to the search query. The database comprises previous search results. If no network based content related to the search query is found in the database, the formatted search query is provided to at least one search engine. Search results are retrieved from the database or the at least one search engine and the retrieved search results are formatted (Summary). While Porter discloses retrieving a search result from a cache as an operation for searching the result from the query cache which including two different operations, *a subset of data is retrieved by the first search operation based on a request for a currently requested page of data, an additional subset of data is retrieved by the second search operation based on the same query and rows of data corresponding to a second display page (col. 7, line 59 to col. 8, line 7)*, Porter does not teach evaluating a reuse count. MacKeeth et al. (U.S. Patent No. 6,763,362) teaches accessing and evaluating reuse count as to *determine whether link-pop is greater or equal to a predetermined popularity threshold, (col. 9, lines 4-25)*. However, Porter et al. and MacKeeth et al., singularly or in combination, fail to anticipate or render the above cited limitations obvious.

**Claim 23** is a system to perform the method of claim 11, claim 23 is thus patentable over the prior art for the same reason as discussed in claim 11.

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5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James K. Trujillo, can be reached on (571) 272-3677. The fax number to this Art Unit is (571)-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Miranda Le/

Primary Examiner, Art Unit 2169